

## CLAIM AMENDMENTS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of claims:

1-121. (Canceled)

122. (Original) An array, comprising:

a positionally-addressable ordered array of polynucleotide probes bound to a solid support; and

said polynucleotide probes comprising a first plurality of at least 100 polynucleotide probes of different nucleotide sequences, each said different nucleotide sequence comprising a sequence complementary and hybridizable to a different genomic sequence of the same species of organism, said respective genomic sequences for the probes being found at sequential sites in said genome of said species of organism, wherein the distance between 5' ends of said sequential sites is always less than 500 bp, wherein the genomic sequences for said first plurality of probes span a genomic region of at least 25,000 bp.

123-177. (Canceled)

178. (Original) A method for preparing an array comprising synthesizing a plurality of polynucleotide probes on a solid support, wherein:

said polynucleotide probes are ordered on said solid support so as to be positionally-addressable;

said polynucleotide probes comprise a plurality of at least 100 polynucleotide probes of different nucleotide sequences;

each said different nucleotide sequence comprises a sequence complementary and hybridizable to a different genomic sequence of the same species of organism;

said respective genomic sequences for said polynucleotide probes are found at sequential sites in the said genome of said species of organism;

the distance between 5' ends of said sequential sites is always less than 500 bp; and  
the genomic sequences for said plurality of probes span a genomic region of at least 25,000 bp.

179-184. (Canceled)

185. (New) The array of claim 122, wherein repetitive elements, simple repeats, or polyX repeats have been excluded from said different nucleotide sequences.

186. (New) The array of claim 185, wherein the array has in the range of 150 to 1,000 different polynucleotide probes per 1 cm<sup>2</sup>.

187. (New) The array of claim 185, wherein the array has in the range of 1,000 to 10,000 different polynucleotide probes per 1 cm<sup>2</sup>.

188. (New) The array of claim 185, wherein the array has in the range of 10,000 to 50,000 different polynucleotide probes per 1 cm<sup>2</sup>.

189. (New) The array of claim 185, wherein the array has greater than 50,000 different polynucleotide probes per 1 cm<sup>2</sup>.

190. (New) The array of claim 185, wherein said genomic sequences for different probes are overlapping in said genome.

191. (New) The array of claim 185, wherein said genomic sequences for different probes are adjacent in said genome.

192. (New) The array of claim 185, wherein said genomic sequence for each probe is spaced apart from that for other probes in said genome by less than 200 bp.

193. (New) The array of claim 185, wherein the nucleotide sequences of the probes consist of no more than 1,000 nucleotides.

194. (New) The array of claim 193, wherein said genomic sequences for different probes are overlapping in said genome.

195. (New) The array of claim 193, wherein said genomic sequences for different probes are adjacent in said genome.

196. (New) The array of claim 193, wherein said genomic sequence for each probe is spaced apart from that for other probes in said genome by less than 200 bp.

197. (New) The array of claim 185, wherein the nucleotide sequences of the probes consist of in the range of 10-200 nucleotides.

198. (New) The array of claim 197, wherein said genomic sequences for different probes are overlapping in said genome.

199. (New) The array of claim 197, wherein said genomic sequences for different probes are adjacent in said genome.

200. (New) The array of claim 197, wherein said genomic sequence for each probe is spaced apart from that for other probes in said genome by less than 200 bp.

201. (New) The array of claim 185, wherein the nucleotide sequences of the probes consist of in the range of 10-30 nucleotides.

202. (New) The array of claim 201, wherein said genomic sequences for different probes are overlapping in said genome.

203. (New) The array of claim 201, wherein said genomic sequences for different probes are adjacent in said genome.

204. (New) The array of claim 201, wherein said genomic sequence for each probe is spaced apart from that for other probes in said genome by less than 200 bp.

205. (New) The array of claim 185, wherein the nucleotide sequences of the probes consist of in the range of 20-50 nucleotides.

206. (New) The array of claim 205, wherein said genomic sequences for different probes are overlapping in said genome.

207. (New) The array of claim 205, wherein said genomic sequences for different probes are adjacent in said genome.

208. (New) The array of claim 205, wherein said genomic sequence for each probe is spaced apart from that for other probes in said genome by less than 200 bp.

209. (New) The array of claim 185, wherein the nucleotide sequences of the probes consist of in the range of 40-80 nucleotides.

210. (New) The array of claim 209, wherein said genomic sequences for different probes are overlapping in said genome.

211. (New) The array of claim 209, wherein said genomic sequences for different probes are adjacent in said genome.

212. (New) The array of claim 209, wherein said genomic sequence for each probe is spaced apart from that for other probes in said genome by less than 200 bp.

213. (New) The array of claim 185, wherein the nucleotide sequences of the probes consist of in the range of 50-150 nucleotides.

214. (New) The array of claim 213, wherein said genomic sequences for different probes are overlapping in said genome.

215. (New) The array of claim 213, wherein said genomic sequences for different probes are adjacent in said genome.

216. (New) The array of claim 213, wherein said genomic sequence for each probe is spaced apart from that for other probes in said genome by less than 200 bp.

217. (New) The array of claim 185, wherein the nucleotide sequences of the probes consist of 60 nucleotides.

218. (New) The array of claim 217, wherein said genomic sequences for different probes are overlapping in said genome.

219. (New) The array of claim 217, wherein said genomic sequences for different probes are adjacent in said genome.

220. (New) The array of claim 156, wherein said genomic sequence for each probe is spaced apart from that for other probes in said genome by less than 200 bp.

221. (New) The array of claim 185, wherein said organism is a eukaryote.
222. (New) The array of claim 185, wherein said organism is a human.
223. (New) The array of claim 185, wherein said organism is a plant.
224. (New) The array of claim 185, wherein said organism is a mammal.
225. (New) The array of claim 185, wherein said first plurality of polynucleotide probes is at least 1,000 probes.
226. (New) The array of claim 185, wherein said first plurality of polynucleotide probes is at least 10,000 probes.
227. (New) The array of claim 185, wherein said first plurality of polynucleotide probes is in the range of 1,000 to 50,000 probes.
228. (New) The array of claim 185, further comprising a sample comprising a population of cellular RNA or nucleic acid derived therefrom on the surface of said solid support such that said sample is in contact with said polynucleotide probes, under conditions conducive to hybridization between said population and said polynucleotide probes.
229. (New) The array of claim 228 wherein said population is labeled.
230. (New) The array of claim 228 wherein said population comprises total cellular mRNA or nucleic acid derived therefrom.
231. (New) The array of claim 228 wherein said population comprises nucleic acids of at least 10,000 different sequences.
232. (New) The array of claim 185, wherein the distance between said 5' ends of said sequential sites is determined after excluding consideration of said repetitive elements, simple repeats, or polyX repeats.